

providing an opening in the skull of said patient;

inserting a catheter through said opening into a region of cerebrospinal fluid (CSF) within said skull of said patient, said catheter having a flow section capable of permitting said CSF to flow therein;

positioning said flow section of said catheter into said region of CSF;

placing at least one sensor capable of sensing pH into said flow section within said catheter to enable said CSF to flow adjacent said sensor so that said sensor may sense at least one characteristic, including pH, of said CSF; and

monitoring changes of said characteristic of said CSF.

15. (Amended) The method of claim 14, further comprising:

draining said CSF through said catheter, wherein said monitored characteristic further includes intracranial pressure.

16. (Amended) The method of claim 10, whereby said characteristic monitored further includes a characteristic selected from the group consisting of partial oxygen pressure, temperature, carbon dioxide concentration, and combinations thereof.

18. (Amended) The method of claim 10, further comprising:

monitoring said characteristic on a continuous basis;

collecting data regarding said characteristic;

storing said data; and

comparing said data.

21. (Amended) A method of monitoring at least one characteristic of cerebrospinal fluid (CSF) of a patient for prognosis and for providing information for treatment, comprising:

providing an opening in said patient through which a region of CSF is accessible;
inserting a catheter through said opening into said region of CSF in said patient, said catheter having a flow section capable of permitting said CSF to flow therein;
positioning said flow section of said catheter into said region of CSF;
placing at least one sensor capable of sensing pH into said flow section within said catheter to enable said CSF to flow adjacent said sensor so that said sensor may sense at least one characteristic, including pH, of said CSF; and
monitoring changes of said characteristic of said CSF.

26. (Amended) The method of claim 21, whereby said characteristic monitored further includes a characteristic selected from the group consisting of partial oxygen pressure, temperature, carbon dioxide concentration, and combinations thereof.

28. (Amended) The method of claim 21, further comprising:

monitoring said characteristic on a continuous basis;
collecting data regarding said characteristic;
storing said data; and
comparing said data.

31. (Amended) An apparatus for monitoring the cerebral cellular environment of a patient, comprising:

a catheter having a wall section adapted to permit cerebrospinal fluid (CSF) to flow therein, said catheter adapted for introduction through an opening in a skull of a patient; and

at least one sensor capable of sensing pH located within said catheter such that said CSF is permitted to flow adjacent said sensor;

whereby said sensor is capable of permitting monitoring of at least one characteristic, including pH, of said CSF over time.

34. (Amended) The apparatus of claim 31, whereby said characteristic monitored further includes a characteristic selected from the group consisting of partial oxygen pressure, temperature, carbon dioxide concentration, and combinations thereof.

36. (Amended) An apparatus for monitoring at least one characteristic of cerebrospinal fluid (CSF) of a patient, comprising:

a catheter having a wall section adapted to permit said CSF to flow therein, said catheter adapted for introduction through an opening in said patient through which a region of CSF is accessible; and

at least one sensor capable of sensing pH located within said catheter such that said CSF is permitted to flow adjacent said sensor;

whereby said sensor is capable of permitting monitoring of at least one characteristic, including pH, of CSF over time.

39. (Amended) The apparatus of claim 36, whereby said characteristic monitored further includes a characteristic selected from the group consisting of partial oxygen pressure, temperature, carbon dioxide concentration, and combinations thereof.--